APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/885,223	06/20/2001	David Ofelt	1014-003US01	4414

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ART UNIT	PAPER NUMBER
2141	

DATE MAILED: 10/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/885,223	OFELT ET AL.
	Examiner	Art Unit	
	Kristie Shingles	2141	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *12 July 2006*.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1-43 and 50-53* is/are pending in the application.

    4a) Of the above claim(s) *44-49* is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *1-43 and 50-53* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a) ☐ All   b) ☐ Some * c) ☐ None of:

      1. ☐ Certified copies of the priority documents have been received.

      2. ☐ Certified copies of the priority documents have been received in Application No. _____.

      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

<u>Claims 1-43 and 50-53 are pending.</u>

RESPONSE TO AMENDMENTS

1.   Claims 1, 7, 12, 19, 28, 29, 32 and 34 have been amended. Claims 44-49 are withdrawn.

RESPONSE TO ARGUMENTS

2.   Applicant's arguments, see Remarks pages 11-18, filed 7/12/2006, with respect to the rejection of claims 1-43 and 50-53 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of *Armistead et al* (US 6,529,959).

CLAIM REJECTIONS - 35 USC § 103

3.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4.   **Claims 1-43 and 50-53,** are rejected under 35 U.S.C. 103(a) as being unpatentable over

Armistead et al (US 6,529,959) in view of *Maurya* (US 6,160,808).

    a.   **Per claims 1, 7 and 12:** *Armistead et al* teach a method comprising:

- receiving a set of fragments at a network device from a plurality of links in one or more interface cards according to a multi-link protocol that allows multiple physical links to be treated by the network device as a single logical link, the set of fragments collectively composing an unsequenced data packet (col.7 lines 20-33, col.7 line 48-col.8 line 31, col.8 lines 49-55);

- performing a first routing operation in the network device in accordance with routing information to send the fragments to a multi-link service card of the network device for sequencing, wherein the routing information identifies the multi-link service card as a destination for the data packets and wherein the multi-link service card of the network device facilitates support of the multi-link protocol by the network device (col.9 line 36-col.10 line 62; segmented data is sent to the MLP line card where it performs segmentation and reassembly of the fragments, mapping to a destination line card is also provisioned); and

- performing a second routing operating in the network device in accordance with routing information to send the fragments as data packet to the one or more interface cards of the network device for communication to a destination device over a computer network (col.8 lines 13-29).

Although *Armistead et al* does teach performing a second routing operating in the network device in accordance with routing information (col.8 lines 13-29), *Armistead et al* fail to explicitly teach sending sequenced fragments as a sequenced data packet to the one or more interface cards of the network device for communication to a destination device over a computer network. However, *Maurya* teaches sending multi-link protocol sequenced fragments as sequenced data packets to receiving devices over the network (col.9 line 56-col.10 line 5, col.10 line 54-col.11 line 11, col.12 line 32-col.13 line 67). It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of *Armistead et al* with *Maurya* for the purpose of sending sequenced fragments as a sequenced data packet to adhere to the transmission size restrictions of the network by fragmenting data packets and providing sequencing numbers dictating the order of the fragments for reassembly.

b.   **Claims 19, 29, 32 and 34** contain limitations that are substantially similar to

claims 1, 7 and 12 and are therefore rejected under the same basis.

c.   **Per claim 50,** *Armistead et al* teach a method comprising:

- receiving data packets in one or more interface cards of a network device (col.7
  lines 20-33, col.7 line 48-col.8 line 31, col.8 lines 49-55);

- performing a first routing operation in accordance with routing information to
  send the data packets to a service card of the network device for prioritization
  (col.9 lines 43-55; packets are distributed to DSPs using distribution algorithms
  such as round-robin, FIFO, Poisson, etc); and

- performing a second routing operation in accordance with the routing information
  to send the prioritized data packets to the interface cards of the network device for
  communication to a destination device over a computer network (col.8 lines 13-
  29, col.10 lines 20-62).

Maurya teaches prioritization of multi-link protocol fragments by sequence

numbers and endpoint discriminator values (col.9 line 56-col.10 line 5, col.10 line 54-col.11 line

11, col.12 line 32-col.13 line 67, col.14 line 2-col.15 line 56, col.17 lines 9-19 and 36-57). It

would have been obvious to one of ordinary skill in the art at the time the invention was made to

combine the teachings of *Armistead et al* with *Maurya* for the purpose of sending sequenced

fragments as a sequenced data packet to adhere to the transmission size restrictions of the

network by fragmenting data packets and providing sequencing numbers dictating the order of

the fragments for reassembly.

d.   **Per claim 2,** *Armistead et al* with *Maurya* teach the method of claim 1, *Armistead et al* further teach wherein the multi-link service card is not directly coupled to any of the links (Figure 7).

e.   **Claims 8 and 16** are substantially similar to claim 2 and are therefore rejected under the same basis.

f.   **Per claim 3,** *Armistead et al* with *Maurya* teach the method of claim 1, *Armistead et al* further teach wherein the multi-link service card is integrated with one of the interface cards (col.10 lines 19-28).

g.   **Claim 9** is substantially similar to claim 3 and is therefore rejected under the same basis.

h.   **Per claim 4,** *Armistead et al* with *Maurya* teach the method of claim 1, *Armistead et al* further teach the method further comprising: sending the data packets from one or more interface cards to the destination device over multiple links according to the multi-link protocol (col.7 lines 20-33, col.7 line 48-col.8 line 31, col.8 lines 49-55; *Maurya*: col.5 lines 7-58).

i.   **Claims 10 and 17** are substantially similar to claim 4 and are therefore rejected under the same basis.

j.   **Per claim 5,** *Armistead et al* with *Maurya* teach the method of claim 4, *Maurya* further teach the method further comprising, prior to sending the sequenced data packets to the one or more interface cards: sending the data packets to the multi-link service card for fragmentation (col.9 lines 56-64).

k.   **Claim 11** is substantially similar to claim 5 and is therefore rejected under the same basis.

l.   **Per claim 6,** *Armistead et al* with *Maurya* teach the method of claim 1, *Armistead et al* further teach the method further comprising: prioritizing the sequenced data packets to provide quality of service prior to sending the sequenced data packets to the interface cards (col.9 lines 21-35 and 43-55; *Maurya*: col.12 lines 32-47).

m.   **Claims 18 and 42** are substantially similar to claim 6 and are therefore rejected under the same basis.

n.   **Per claim 13,** *Armistead et al* with *Maurya* teach the method of claim 12, *Maurya* further teach wherein the data blocks are fragments, the method further comprising building a packet from the fragments in the first multi-link service card (col.9 line 56-col.10 line 66, col.12 lines 11-42).

o.   **Claim 41** is substantially similar to claim 13 and is therefore rejected under the same basis.

p.   **Per claim 14,** *Maurya* teaches the method of claim 13, further comprising fragmenting the packet in the first multi-link service card (col.9 line 56-col.10 line 66, col.12 lines 4-31, col.13 line 27-col.15 line 65).

q.   **Per claim 15,** *Maurya* teach the method of claim 14, further comprising sending the fragmented packet to a destination device over a computer network (col.13 line 27-col.15 line 65).

r.   **Claims 20-22** are substantially similar to claim 15 and are therefore rejected under the same basis.

s.   **Per claim 23,** *Armistead et al* with *Maurya* teach the router of claim 22, *Armistead et al* further teach wherein the routing engine includes a routing table (col.5 lines 9-21 and 52-62).

t.   **Claim 51** is substantially similar to claim 23 and is therefore rejected the same basis.

u.   **Per claim 24,** *Armistead et al* with *Maurya* teach the router of claim 19, *Maurya* further teach wherein the data blocks are data packets (col.9 line 56-col.10 line 66, col.12 lines 11-42).

v.   **Claims 25, 30, 31 and 33** are substantially similar to claim 24 and are therefore rejected under the same basis.

w.   **Per claim 26,** *Armistead et al* with *Maurya* teach the router of claim 19, *Armistead et al* further teach the router further comprising a plurality of interface cards (col.9 line 36-col.10 line 45).

x.   **Per claim 27,** *Armistead et al* with *Maurya* teach the router of claim 19, *Armistead et al* further teach the router further comprising a plurality of multi-link service cards (col.10 lines 20-22; *Maurya*; col.13 lines 49-51).

y.   **Per claim 28,** *Armistead et al* with *Maurya* teach the router of claim 19, *Maurya* further teach wherein the routing control unit forwards sequenced data packets to the multi-link service card for fragmentation according to the multi-link protocol prior to selection one of the interface cards to forward the sequenced data blocks over the computer network, and wherein fragments of the sequenced data blocks are sent over the computer network via the interface card following the fragmentation according to the multi-link protocol (col.9 line 56-col.10 line 5, col.10 line 54-59, col.12 lines 10-16, col.14 line 57-col.15 line 65).

z.   **Per claim 35,** *Armistead et al* with *Maurya* teach the multi-link service card of claim 34, *Maurya* further teach the multi-link service card further comprising: a memory logic unit coupled to the input logic unit and the output logic unit for storing at least part of the data blocks during sequencing (col.17 lines 12-19).

aa.   **Per claim 36,** *Armistead et al* with *Maurya* teach the multi-link service card of claim 34, *Maurya* further teach wherein the output unit fragments sequenced data blocks (col.9 line 56-col.10 line 5, col.10 line 54-59, col.12 lines 10-16, col.14 line 57-col.15 line 65).

bb.   **Per claim 37,** *Armistead et al* with *Maurya* teach the multi-link service card of claim 34, *Maurya* further teach wherein the input logic unit includes an input buffer, an unprocessed buffer and a parser (col.9 line 67-col.10 line 1, col.12 lines 36-42 and 58-61, col.17 lines 12-19).

cc.   **Per claim 38,** *Armistead et al* with *Maurya* teach the multi-link service card of claim 34, *Maurya* further teach wherein the output logic unit includes an output buffer, a processed buffer and a fragmenter-assembler module (col.9 line 67-col.10 line 5, col.10 lines 54-58, col.12 lines 36-42 and 58-61, col.17 lines 12-19).

dd.   **Per claim 39,** *Maurya* teaches the multi-link service card of claim 35, wherein the memory logic unit includes a memory device, a data memory control, and a data state logic (col.17 lines 12-19).

ee.   **Per claim 40,** *Armistead et al* with *Maurya* teach the multi-link service card of claim 34, *Maurya* further teach wherein the sequencer unit includes a reorder module (col.9 line 67-col.10 line 5, col.10 lines 54-58, col.12 lines 36-42 and 58-61, col.17 lines 12-19).

ff.   **Claim 43** is substantially similar to claim 35 and 39-41 and is therefore rejected under the same basis.

gg.   **Claim 52** is substantially similar to claims 24 and 6 and is therefore rejected under the same basis.

hh.   **Per claim 53,** *Armistead et al* with *Maurya* teach the method of claim 1, *Armistead et al* further teach wherein the interface card and the multi-link service card comprise removable cards that may be inserted and removed from the network device (col.9 lines 34-42).

CONCLUSION

5.   The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Shalom (6,876,669), Ichimi (6,865,687), Hui et al (6,198,749), Bhatia et al (6,118,768), Fletcher (6,072,797), Pierce et al (6,157,649), Hong et al (6,563,821), Ahuja et al (6,222,837), Lang et al (6,188,699), Kalkunte et al (6,977,892), Jouppi et al (6,795,435), Chuah et al (6,577,644), Bender (6,747,964), Khotimsky et al (6,788,686).

6.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kristie Shingles whose telephone number is 571-272-3888. The examiner can normally be reached on Monday-Friday 8:30-6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rupal Dharia can be reached on 571-272-3880. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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